

2157 EW  
[X] First Class Mail or [ ] Express Mail Certificate \_\_\_\_\_

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**



Int'l Application of: MCELWAIN, Thomas P.

Group Art Unit: 2157

Serial No. 10/531,772

Examiner:

Filing or 371 (c) Date: 04/19/2005

Atty. Dkt. No: 20030076-US

For: JOINT SYMBOL, AMPLITUDE, AND RATE ESTIMATOR

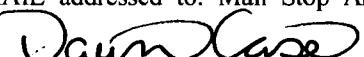
To: Mail Stop Amendment  
Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Fm:

42716

CERTIFICATE OF MAILING 37 CFR 1.8: I certify that this correspondence is being deposited on the below date with the U.S. Postal Service with sufficient postage as FIRST CLASS MAIL addressed to: Mail Stop Amendment, Commissioner of Patents, PO Box 1450, Alexandria, VA 22313-1450

Date: 9/6/05

  
Dawn M. Case

Commissioner:

**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT**

Transmitted herewith is the Applicant's Information Disclosure Statement, 2 sheets form PTO/SB/08A and/or PTO/SB/08B, and 10 references and other information. Pursuant to 37 CFR 1.98 (a)(2)(i) applicant has not transmitted herewith copies of cited U.S. Patents and U.S. patent application publications as the above application was filed after June 30, 2003. Please enter in the above application and communicate in all related matters with the undersigned.

**DEPOSIT ACCOUNT 190130 AUTHORIZATION** – All necessary fees are intended to be included, however the Office is hereby authorized to charge any deficiency or credit any overpayment in the fees to the above deposit account, owned by BAE SYSTEMS Information and Electronic Systems Integration Inc. an authorized signator for which is Kevin M. Perkins, V.P. & Company Counsel, and for whom the undersigned are authorized agents.

Respectfully submitted,



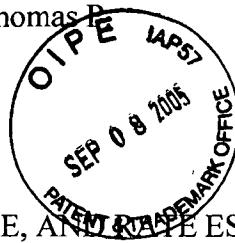
Scott J. Asmus, Reg. No. 42,269  
Andrew P. Cernota, Reg. No. 52,711  
Attorneys/Agents for Applicant

Cus. No. 42716  
Maine & Asmus  
PO Box 3445  
Nashua, NH 03061-3445  
Tel. No. (603) 886-6100, Fax. No. (603) 886-4796  
Info@maineandasmus.com

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TG/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: MCELWAIN, Thomas P. Group Art Unit: 2157  
Serial No. 10/531,772 Examiner:  
Filing or 371 (c) Date: 04/19/2005 Atty. Dkt. No: 20030076-US  
For: JOINT SYMBOL, AMPLITUDE, AND TRADE ESTIMATOR



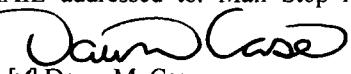
To: Mail Stop Amendment  
Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Fm:

42716

CERTIFICATE OF MAILING 37 CFR 1.8: I certify that this correspondence is being deposited on the below date with the U.S. Postal Service with sufficient postage as FIRST CLASS MAIL addressed to: Mail Stop Amendment, Commissioner of Patents, PO Box 1450, Alexandria, VA 22313-1450

Date: 9/6/05

  
[X] Dawn M. Case

Commissioner:

INFORMATION DISCLOSURE STATEMENT

Applicants submit this statement and the attached 2 sheet(s) of form PTO/SB/08A and/or PTO/SB/08B and 10 references and other information in accordance to the duty of disclosure under 37 C.F.R. §§1.56, 1.97, and 1.98, and requests consideration hereof. Pursuant to 37 CFR 1.98 (a)(2)(i) applicant has not transmitted herewith copies of cited U.S. Patents and U.S. patent application publications as the above application was filed after June 30, 2003.

Compliance with 37 C.F.R. §1.97: This Information Disclosure Statement is filed within three (3) months of the filing date of a National Application or before the mailing date of a first office action on the merits. No fee or certification is required.

Information Cited: The Applicants hereby make of record in the above-identified application, the information listed on the attached form PTO/SB/08A and/or PTO/SB/08B. The order of presentation of the references should not be construed as an indication of the importance of the reference. As all the references listed on attached Form PTO/SB/08A and/or PTO/SB/08B are in English, no commentary is required.

Remarks: A copy of each reference, together with a listing on Form PTO/SB/08A and/or PTO/SB/08B, is submitted herewith. Applicants respectfully request that:

1. The Examiner consider completely the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims;

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TG/

2. The enclosed form PTO/SB/08A and/or PTO/SB/08B be signed by the Examiner to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application; and

3. The citations for the information be printed on any patent which issues from this application.

By submitting this Information Disclosure Statement, the Applicants make no representation that a search has been performed, of the extent of any search performed, or that more relevant information does not exist.

By submitting this Information Disclosure Statement, the Applicants make no representation that the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b).

By submitting this Information Disclosure Statement, the Applicants make no representation that the information cited in the Statement is, or is considered to be, in fact, prior art as defined in 37 C.F.R. §102.

Notwithstanding any statement by the Applicant, the Examiner is urged to form his own conclusion regarding the relevance of the cited information.

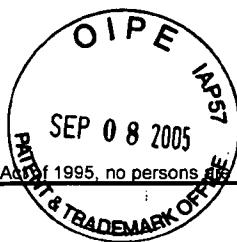
An early and favorable action is hereby requested.

Respectfully submitted,



Scott J. Asmus, Reg. No. 42,269  
Andrew P. Cernota, Reg. No. 52,711  
Attorneys/Agents for Applicant

Cus. No. 42716  
Maine & Asmus  
PO Box 3445  
Nashua, NH 03061-3445  
Tel. No. (603) 886-6100, Fax. No. (603) 886-4796  
Info@maineandasmus.com



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

(Use as many sheets as necessary)

## Complete if Known

Sheet

1

of

2

|                      |                     |
|----------------------|---------------------|
| Application Number   | 10/531,772          |
| Filing Date          | 04/19/2005          |
| First Named Inventor | McElwain, Thomas P. |
| Art Unit             | 2157                |
| Examiner Name        |                     |

Attorney Docket Number 20030076-US

## U. S. PATENT DOCUMENTS

| Examiner Initials* | Cite No. <sup>1</sup> | Document Number                          | Publication Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages, Columns, Lines, Where<br>Relevant Passages or Relevant<br>Figures Appear |
|--------------------|-----------------------|--|--------------------------------|--|---|
|                    |                       | Number-Kind Code <sup>2</sup> (if known) |                                |  |   |
|                    |                       | US- 6,298,461                            | 10-02-2001                     | Tong et al.  |   |
|                    |                       | US- 6,373,858 B1                         | 04-16-2002                     | Soleimani et al.                                   |   |
|                    |                       | US- 6,473,417 B1                         | 10-29-2002                     | Herzog   |   |
|                    |                       | US- 6,510,536 B1                         | 01-21-2003                     | Crozier et al.                                     |   |
|                    |                       | US- 6,574,291 B2                         | 06-03-2003                     | Doetsch et al.                                     |   |
|                    |                       | US- 6,704,376 B2                         | 03-09-2004                     | Mills et al.                                       |   |
|                    |                       | US- 6,839,390 B2                         | 01-04-2005                     | Mills  |   |
|                    |                       | US- 2002/0110206 A1                      | 08-15-2002                     | Becker et al.                                      |   |
|                    |                       | US- 2002/0122464 A1                      | 09-05-2002                     | Dodge  |   |
|                    |                       | US- 2003/0031237 A1                      | 02-13-2003                     | Bachl et al.                                       |   |
|                    |                       | US- 2003/0074191 A1                      | 04-17-2003                     | Byrnes et al.                                      |   |
|                    |                       | US- 2003/0086512 A1                      | 05-08-2003                     | Rick et al.  |   |
|                    |                       | US- 2003/0102905 A1                      | 06-05-2003                     | Ha et al.  |   |
|                    |                       | US- 2003/0125937 A1                      | 07-03-2003                     | Thomson  |   |
|                    |                       | US- 2003/0128836 A1                      | 07-10-2003                     | Stephens et al.                                    |   |
|                    |                       | US- 2003/0138054 A1                      | 07-24-2003                     | Ha et al.  |   |
|                    |                       | US-                                      |                                |  |   |
|                    |                       | US-                                      |                                |  |   |
|                    |                       | US-                                      |                                |  |   |

## FOREIGN PATENT DOCUMENTS

| Examiner Initials* | Cite No. <sup>1</sup> | Foreign Patent Document   | Publication Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages, Columns, Lines,<br>Where Relevant Passages<br>Or Relevant Figures Appear | T <sup>6</sup> |
|--------------------|-----------------------|---|--------------------------------|--|---|----------------|
|                    |                       | Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known) |                                |  |   |                |
|                    |                       |   |                                |  |   |                |
|                    |                       |   |                                |  |   |                |
|                    |                       |   |                                |  |   |                |
|                    |                       |   |                                |  |   |                |
|                    |                       |   |                                |  |   |                |
|                    |                       |   |                                |  |   |                |
|                    |                       |   |                                |  |   |                |

Examiner  
Signature

/Temesghen Ghebretinsae/

Date  
Considered

06/19/2008

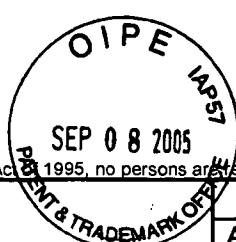
\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TG/

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



Substitute for form 1449/PTO

Complete if Known

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

2

of

2

|                      |                     |
|----------------------|---------------------|
| Application Number   | 10/531,772          |
| Filing Date          | 04/19/2005          |
| First Named Inventor | McElwain, Thomas P. |
| Art Unit             | 2157                |
| Examiner Name        |                     |

Attorney Docket Number

20030076-US

## NON PATENT LITERATURE DOCUMENTS

|                    |                       |   |                |
|--------------------|-----------------------|---|----------------|
| Examiner Initials* | Cite No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T <sup>2</sup> |
|                    |                       | CHAN, ALBERT M. et al., "A CLASS OF ASYMPTOTICALLY OPTIMUM ITERATED-DECISION MULTIUSER DETECTOR", pp. 1-4.  |                |
|                    |                       | VERDU, SERGIO, "Minimum Probability of Error for Asynchronous Gaussian Multiple-Access Channels", IEEE Transactions on Information Theory, January 1986, pp. 85-96, Vol. IT-32, No. 1.  |                |
|                    |                       | LUPAS, RUXANDRA et al., "Linear Multiuser Detectors for Synchronous Code-Division Multiple-Access Channels", IEEE Transactions on Information Theory, January 1989, pp. 123-136, Vol. 35, No. 1.  |                |
|                    |                       | LUPAS, RUXANDRA et al., "Near-Far Resistance of Multiuser Detectors in Asynchronous Channels", IEEE Transactions on Communications, April 1990, pp. 496-508, Vol. 38, No. 4.  |                |
|                    |                       | ALEXANDER, PAUL D. et al., "Iterative Multiuser Interference Reduction: Turbo CDMA", IEEE Transactions on Communications, July 1999, pp. 1008-1014, Vol. 47, No. 7.   |                |
|                    |                       | VARANASI, MAHESH K. et al., "Near-Optimum Detection in Synchronous Code-Division Multiple-Access Systems", IEEE Transactions on Communications, May 1991, pp. 725-736, Vol. 39, No. 5.  |                |
|                    |                       | DUEL-HALLEN, ALEXANDRA, "Decorrelating Decision-Feedback Multiuser Detector for Synchronous Code-Division Multiple-Access Channel", February 1993, pp. 285-290, Vol. 41, No. 2.   |                |
|                    |                       | WEI, LEI et al., "Synchronous DS-SSMA System with Improved Decorrelating Decision-Feedback Multiuser Detection", IEEE Transactions on Vehicular Technology, August 1994, pp. 767-772, Vol. 43, No. 3.   |                |
|                    |                       | WANG, XIAODONG, et al., "Iterative (Turbo) Soft Interference Cancellation and Decoding for Coded CDMA", IEEE Transactions on Communications, July 1999, pp. 1046-1061, Vol. 47, No. 7.  |                |
|                    |                       | POOR, H. VINCENT, "Turbo Multiuser Detection: An Overview", IEEE 6th Int. Symp. on Spread-Spectrum Tech. & Appli., September 6-8, 2000, pp. 583-587.  |                |

|                    |                          |                 |            |
|--------------------|--------------------------|-----------------|------------|
| Examiner Signature | /Temesghen Ghebretinsae/ | Date Considered | 06/19/2008 |
|--------------------|--------------------------|-----------------|------------|

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TG/